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## ECHINODERMATA

COMPILED BY

A. M. CLARK, M.A.

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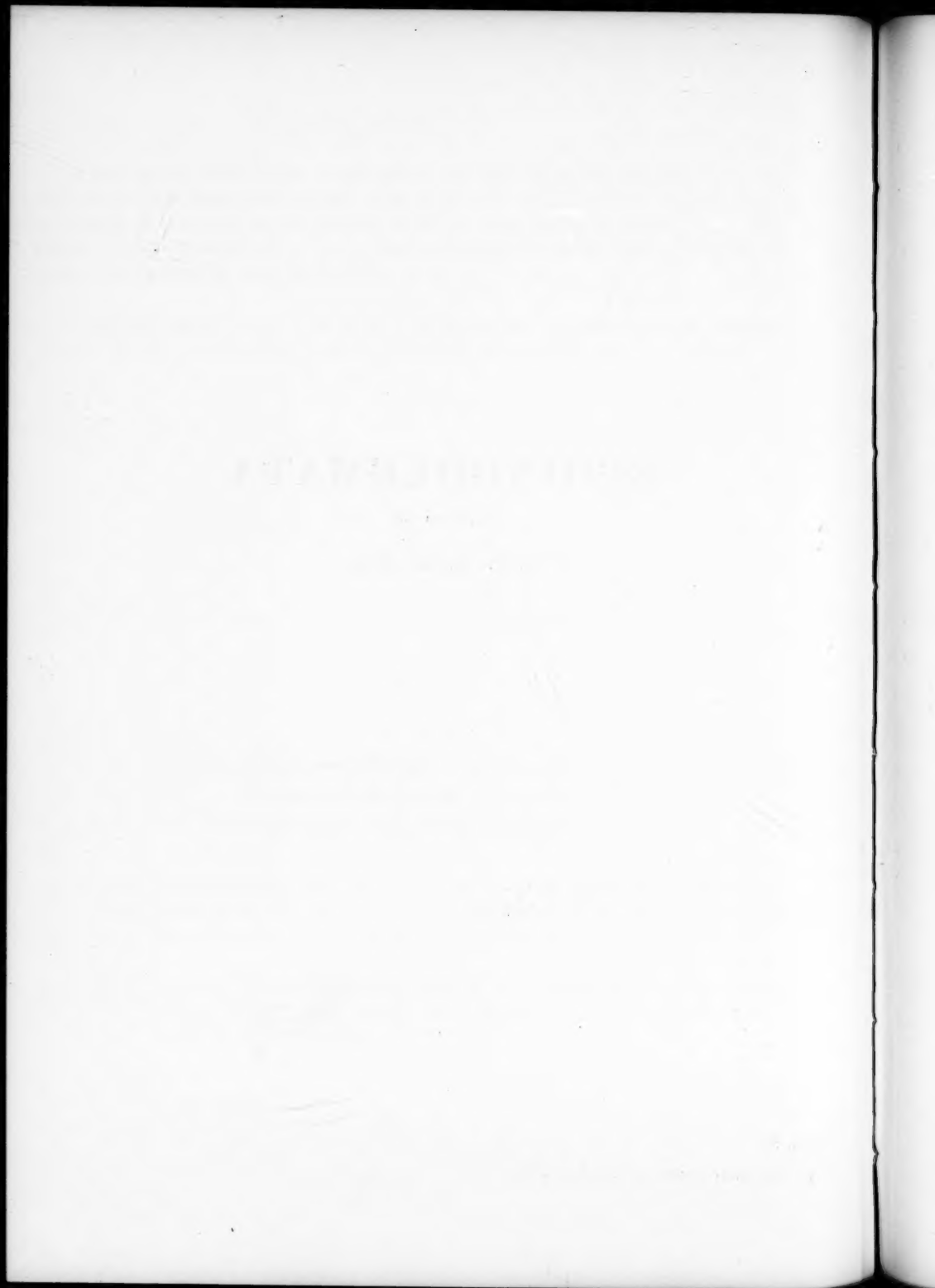
# **ECHINODERMATA**

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Vol. 97

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**Abrerson, T. & Engel, H.** Über einige Echinodermen von El Salvador (C-Amerika) und von den Farallon-Inseln (Kalifornien). Senck. biol. 41: 363-366 2 pls. 5 figs.

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Zimmerman, A. M. see Marsland, D.

## II.—SUBJECT INDEX

### GENERAL LITERATURE AND HISTORY

**Text-books.**—Palaeozoology, Ehrenberg; encyclopedia articles on various major groups, Fell (3); amateur fossil collector's handbook for Texas, U.S., Matthews; biology of marine animals, Nicol; Tertiary stratigraphy, Papp; micro-palaeontology, Pokorný; stratigraphic palaeontology, Termier & Termier.

**Bibliography.**—Of the Danian and Paleocene, Brotszen.

**Nomenclature.**—Proposed suppression of *Spatagus* O. F. Müller, 1776, Melville (1); proposed stabilization of *Echinus minutus* Buckman, 1845, Melville (2); proposed validation of *Encrinurus*, Spillane; keys to the genera of Ophiuroidea with synonyms, Fell (2).

**Collections.**—Of the Oceanographic Institute, University of San Pablo, Brazil, asteroids, Bernasconi (1); catalogue of type fossils of the Geological Survey of Canada, Bolton.

**Obituary.**—Louis Castex (1890-1955), Magne.

### STRUCTURE

**Microstructure.**—Sectioning sea urchin spines, Anon. (2), Needham; structures that may be adaptations for cell adhesion, Afzelius; histological studies on digestive system of starfish *Henricia*, Anderson (2); yolk globules

of oocytes, Bolognari; secretory structures in starfish tube foot, Chaet & Philpott; structure of ground cytoplasm as revealed by electron microscopy, Gross, Philpott & Naas; of tube-feet of *Antedon bifida*, Nichols; starfish eye-spot, Philpott & Chaet; origin of the nucleolus, Vincent.

**Skeleton.**—Crystallography of echinoid calcite, Raup; statistical study of holothurian sclerites, Hampton.

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**Respiration.**—Cytoplasmic viscosity in the echinoid egg during suppressed respiration, Butros (1); in mature echinoid eggs, Gonse; release of respiratory control by DNP, Immers & Runnström.

**Growth.**—Of echinoid test, Raup, Swan (1).

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**Regeneration.**—Of the cardiac stomach of *Asterias*, Anderson (1).

**Muscular activity.**—The motility-inducing factor of flagellum and the relaxing factor of muscle, Kinoshita; longitudinal muscles of *Holothuria grisea*, Sawaya & Ancona Lopez.

**Bio-chemistry.**—Determination of acetylcholine content from electric organ extract of the ray *Narcine* tested on longitudinal muscle of *Holothuria*, Ambache & Sawaya; estradiol-17 $\beta$  and progesterone in starfish ovaries, Botticelli, Hisaw & Wotiz; sterol biosynthesis, Fagerlund & Idler; effect of sugars on differentiation of larvae, Hörstadius (2); mucoprotein in holothurians, Motohiro; biochemical approach to cell morphology, Vincent.

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**Sexuality.**—Of *Echinaster sepositus*, Cognetti & Delavault (2), of *Asterina*, Delavault (3), of *Strongylocentrotus*, Fuji.

**Sex maturation.**—Effect of temperature on gonadal growth, Boolootian; size of echinoids at sex maturity, Fuji.

**Sexual dimorphism.**—In echinoids, Tahara, Okada & Kobayashi.



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*Encope micropora*, Aberson & Engel p. 365, pl. liv figs. 7-9, pl. lv figs. 11, 12; *E. (Encope) emarginata*, Brito (1) p. 6 pl. i fig. b, pl. ii fig. e, pl. iii fig. a; *E. grandis*, Staněk pp. 45, 46, figs.

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†*Hemicidaris jaialmerensis* sp. nov. Jurassic Rajasthan, India, Sahni & Bhatnagar in Sahni p. 187, Sahni & Bhatnagar pp. 431-433 pl. iv figs. 11-17.

†*Hemipneustes (Spatagoidea) striato-radiatus*, Askerov & Mamedzade pp. 46-47 fig. 2.

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†*Ilaronia Jeanneti* sp. nov. Eocene France, Castex p. 33 pl. ii figs. 8-11; *I. arnaldi*, Chabaglian pp. 164-177 (statistical study of variation) figs. 16-29.

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†*Kewia minuta* pp. 308-310 text-figs. 3, 4 pl. xxxv figs. 3-9, *uogensis* pp. 307-308 text-figs. 1, 2 pl. xxxv figs. 1, 2, spp. nov. Miocene Japan, Shibata.

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#### †SOMASTEROIDEA

[Vacant]

#### ASTEROIDEA

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†*Asteroid* indet., Carboniferous Missouri, U.S., **Chenoweth** pp. 35-36 figs. 1, 2.
- OPHIUROIDEA**
- Ophiuroidea, keys to the families and recent genera, **Fell** (2).  
†? *Acoura* sp. Bayreuth, Germany, **Heller** pp. 15-23 fig. 1.  
*Amphigyptis* Nielsen, 1933, [32] referred to family Hemieuryalidae from Amphiuridae, **Fell** (2) p. 12.  
*Amphiodia craterodmeta*, **Djakonov** (2) pp. 297-298.  
*Amphipholis squamata*, **Zavodnik** (1) pp. 11-12 fig. 2.  
*Amphipsila* Verrill, 1899, valid in family Ophiacanthidae, **Fell** (2) p. 16.  
Sub-genus *Amphispina* Nielsen, 1932, of genus *Amphiodia*, a synonym of *Ophiophragmus* Lyman, 1865, **Fell** (2) p. 22.  
*Amphistigma* H. L. Clark, 1938, a provisional synonym of *Ophiostigma* Lütken, 1856, **Fell** (2) p. 22.  
*Amphiura sundevalli*, **Djakonov** (2) p. 297; *A. alba*, *angularis*, *magellanica*, *norae*, **Fell** (1) p. 68.  
†*Amphiura*? *badensis* p. 163 pl. xv figs. 1, 2, *giganti-formis* pp. 163-164 pl. xiv figs. 1-8, spp. nov. Miocene Austria, **Küpper**.  
†*Asteronyx* sp., Miocene Austria, **Küpper** p. 164 pl. xv fig. 3.  
*Astrogeron* Verrill, 1899 regarded as distinct from *Ophiogeron* Lyman, 1878, **Fell** (2) p. 13.  
*Astrogymanotes* H. L. Clark, 1914 included in family Ophiomyxidae rather than Trichasteridae, **Fell** (2) p. 15.  
*Astrophyton linckii*, *muricatum*, **Staněk** p. 56 figs.  
*Astrothorax waiti*, **Fell** (1) p. 67.  
*Euryale* attributed to Oken, 1815 rather than Lamarck, 1816, **Fell** (2) p. 11.  
†*Geocoma carinata*, **Hess** (3) figs. 35, 36, *G. elegans*, see *Ophiopinna elegans*.  
*Gorgonocephalus caryi* with forma *stimpsoni*, **Djakonov** (2) p. 296.  
Order Myophiuroidea Matsumoto, 1915 a synonym of Ophiurida Mueller & Troschel, 1840, **Fell** (2) p. 4.  
*Ophiacantha vepratrica*, **Fell** (1) p. 67.  
†*Ophiacantha*? sp. or *Ophiothrix*? sp., **Hess** (4) figs. 39-50.  
*Ophiactis savignyi*, **Brito** (4) p. 4 fig. 3; *O. profundus* var. *novaezelandiae*, **Fell** (1) p. 67.  
*Ophiobyrella* Verrill, 1899 valid, **Fell** (2) p. 15.  
*Ophioceres huttoni*, **Fell** (1) pp. 68, 69.  
*Ophiochondrella* Verrill, 1899 referred to family Ophiacanthidae, **Fell** (2) p. 18.  
*Ophiocoma scolopendrina*, **Baba** p. 146 figs.  
*Ophiocrasis* H. L. Clark, 1911 probably no more than a subgenus of *Ophionereis*, **Fell** (2) p. 26.  
*Ophiocten sericeum*, **Djakonov** (2) p. 298.  
*Ophiocyclus* H. L. Clark, 1939, doubtfully distinct from *Amphigyptis* Nielsen, 1933 [32], in family Hemieuryalidae, **Fell** (2) p. 12.  
*Ophiodera* Verrill, 1899 provisionally valid, **Fell** (2) p. 14.  
*Ophioderma longicaudum*, **Zavodnik** (1) p. 13.  
*Ophiodesmus* Ziesenhenné, 1940 valid, **Fell** (2) p. 26.  
*Ophiodyscrita* H. L. Clark, 1938 probably the juvenile form of *Cryptopelta* H. L. Clark, 1909, **Fell** (2) p. 27.  
Ophiopelidae Ljungman, 1867 a synonym of Ophiuridae Lyman, 1865, **Fell** (2) pp. 1, 28.  
*Ophiolimna* Verrill, 1899 valid, **Fell** (2) p. 17.  
Ophiomastinae Matsumoto, 1915 a synonym of Ophiurinae Lyman, 1865, **Fell** (2) pp. 1, 28.  
*Ophiomiesidium irene*, **Fell** (1) p. 69.  
†*Ophiomusium* cf. *gagnebini*, **Hess** (4) pp. 389-396 figs. 1-6, 16-23.  
*Ophiomyza brevirima*, **Fell** (1) p. 67; *O. pentagona*, **Zavodnik** (1) p. 11.  
*Ophionercia reticulata*, **Brito** (4) pp. 2, 4 fig. 2; *O. fasciata*, **Fell** (1) p. 69.  
*Ophiopenia disacantha*, *tetracantha*, **Djakonov** (2) p. 300.  
*Ophiopholis aculeata*, **Djakonov** (2) pp. 296-297.  
†*Ophiopinna* gen. nov. pp. 375-376, with type *Geocoma elegans* Heller, **Hess** (3) pp. 347-371 figs. 1-34, pl. i; *O. wolburgi* sp. nov. Jurassic Switzerland, **Hess** (4) pp. 411-420 figs. 24-38.  
*Ophioplocus japonicus*, **Baba** p. 88 fig., righting.  
*Ophiopluteus* sp., Portuguese Guinea, **Santos Pinto** p. 12 pl. iii fig. 1, pl. vi figs. 1, 2.  
*Ophiopsila aranea*, **Zavodnik** (1) p. 13.  
*Ophiopyren stratum*, **Djakonov** (1) pp. 328-329, 332 fig. 8.  
*Ophiopyrgoides* H. L. Clark, 1939 possibly represents a growth stage of *Ophiopyrgus* Lyman, 1878, **Fell** (2) p. 31.  
*Ophiopsemnotes* Matsumoto, 1917 a synonym of *Ophiophthalmus* Matsumoto, 1917, **Fell** (2) p. 18.  
*Ophiostegastus* Murakami, 1944, a synonym of *Ophiocornus* H. L. Clark, 1915, **Fell** (2) p. 28.  
*Ophiothrix*, **Baba** p. 89 figs.; *O. violacea*, **Brito** (4) p. 2 fig. 1; *O. fragilis*, **Zavodnik** (1) p. 13.  
†*Ophiothrix*? *royeri*, **Hess** (4) pp. 396-401 figs. 7, 8.



†*Ophiotrigonum* gen. nov. (family uncertain) for type *O. oxfordiense* sp. nov. Jurassic Switzerland, Hess (4) pp. 401-411 figs. 9-15.

*Ophiotriton* Döderlein, 1896, probably no more than a subgenus of *Ophioneis* Lütken, 1859, Fell (2) p. 26.

*Ophietylos* Murakami, 1943 very close to *Ophiozonoida* H. L. Clark, 1915, Fell (2) p. 33.

*Ophiura maculata* pp. 298-299, *sarsi* pp. 299-300, *Djakonov* (2); *O. chathamensis*, Fell (1) p. 69; *O. albida*, Ursin pp. 56-63 fig. 14.

†*Ophiura*? *parviformis* pp. 161-162 pl. xv figs. 4-14, *vindobonensis* p. 162 pl. xiv figs. 9-17, spp. nov. Miocene Austria, Küpper; *O. wetherelli*, Anon. (1) pl. iv fig. 7.

Ophiuridae Lyman, 1865 used in place of Ophiolipidae Ljungman, 1867, Fell (2) pp. 1, 28.

Ophiurinae Lyman, 1865 used in place of Ophiomastinae Matsumoto, 1915, Fell (2) pp. 1, 28.

*Ophiuroglypha irrorata*, Fell (1) p. 68.

*Pectinura gracilis, maculata*, Fell (1) p. 69.

*Stegophiura nodosa*, *Djakonov* (2) p. 298.

"Stella laevis" Rondelet, 1554 probably an *Ophioderma*, Fell (2) p. 27.

#### CRINOIDEA

Crinoidea, Fell (3) vol. 1 pp. 566-567 fig.; vol. 2 p. 432 fig.; vol. 3 pp. 547-550 10 figs.; vol. 5 p. 300 fig.; vol. 7 p. 49 fig.

†*Actinocrinus nodosus*, Pickett p. 88 figs. 1, 2.

†*Allagocrinus bassleri*, Strimple (1) pp. 116-117 pl. i figs. 18-23.

*Antedon mediterranea*, Zavodnik (1) p. 8.

†*Apographocrinus typicalis*, Strimple (1) pp. 117-120 pl. i figs. 1-11, pl. ii fig. 1.

†*Balanocrinus subbasaltiformis*, Anon. (1) pl. iv figs. 8, 9.

*Bathocrinus (Ilycrinus) carpenteri*, *Djakonov* (1) pp. 330-331, 332 fig. 9.

†*Calceolispongidae* gen. et. sp. nov., Permian W. Australia, Dickens & Thomas pp. 78-79.

*Cenocrinus* Thomson, 1864, with type species *Isis asteria* Linnaeus, 1767, proposed to go on the Official List of Generic Names in Zoology, Spillane pp. 65-68.

†*Encrinurus* Lamarck, 1801, with type species *E. liliiformis* Lamarck designated, proposed to go on the Official Lists of Generic and Specific Names in Zoology, Spillane pp. 65-68; *E. cassianus* pp. 543-544, *granulosus* pp. 544-545, *E. cf. liliiformis* pp. 545-546, *E. monetensis* p. 546, *E. cf. varians* pp. 546-547, Virgill.

†*Erisocrinus typus*, Strimple (1) pp. 120-121 pl. i figs. 14-17, pl. ii figs. 2-5.

†*Ethelocrinus expansus* p. 127 pl. ii figs. 8, 10, *plattsburgensis* p. 126 pl. ii figs. 6, 9, 12, Strimple (1).

†*Galateocrinus Allisoni*, Strimple (2) pp. 195-196.

*Heliometra glacialis*, *Djakonov* (2) p. 300.

†*Kallimorphocrinus angulatus*, Regnéll (3) fig. 6 p. 780.

†*Moscovicrinus bijugus*, Ivanova frontispiece.

†*Paragassizocrinus* pp. 5-8, with *P. asymmetricus* pp. 15-18 pl. i figs. 1-5, *delloideus* pp. 20-22 pl. i figs. 11-17, *disculus* pp. 23-24 pl. iii figs. 1-3, *elongatus* pp. 18-19 pl. ii figs. 1, 2, *hoodi* pp. 22-23 pl. i figs. 9, 10, *springeri* p. 24 pl. ii figs. 6, 7, *turris* pp. 19-20 pl. i figs. 6-8, spp. nov. Carboniferous Oklahoma, U.S., *P. mcguirei* pp. 13-15 pl. ii figs. 3, 8-11, *turris* pp. 19-20 pl. i figs. 6-8, 5, 12, 13, Strimple (3); *P. atoka* sp. nov. Carboniferous Oklahoma, U.S., Strimple & Blythe pp. 25-29 pl. iii figs. 4-9 text-fig. 2; *P. tarri*, Strimple (1) pp. 123-124 pl. ii figs. 7, 10, 13.

†*Platycrinites* sp., Ivanova p. 134 pl. xviii fig. 7.

†*Rhipidocrinus* sp. cf. *R. perlaticatus*, Breimer pp. 248-260 text-figs. 1-4 pl. i figs. 1, 2.

†*Saccocoma*, Lefeld & Radwanski pp. 593-610 text-fig. 1 pls. xxxviii-xli.

†*Synbathocrinus melba*, Strimple (1) pp. 121-123 text-figs. 1, 2 pl. i figs. 12, 13.

†*Synerocrinus incurvus*, Ivanova p. 134 pl. xi fig. 3.

†*Ulocrinus buttsi*, Cronoble pp. 96-99 pl.

Crinoidea A pp. 826-827 pl. xcvi figs. 53-55, B p. 827 pl. xcix fig. 55, Lochman & Hu.

†Crinoids, "intermediate" forms, Regnéll (1) pp. 76-77.

#### †MACHAERIDEA

*Plumulites* cfr. *primus* pp. 266-267 pl. xiii fig. 17, *P. sp. nov.* p. 267 pl. xiii figs. 18, 19, Ordovician S. Korea, Kobayashi.

*Sokolophocoleus* nom. nov. for *Lophocoleus* Ruedemann, homonym of *Lophocoleus* Butler, 1886 (Lepidoptera); type *Pollicipes siluricus* Ruedemann, Pope p. 1054.

#### †EOCRINOIDEA

Eocrinoids, Regnéll (1) p. 72.

#### †PARACRINOIDEA

Paracrinoids, Regnéll (1) pp. 72-73.

#### †CYSTOIDEA

*Holocystites alternatus, greenvillensis*, Regnéll (3) fig. 3 a-c p. 776.

Hydrophorids, Regnéll (1) pp. 73-76, (3) pp. 775-777.

Cystoid, gen. & sp. indet., Ordovician S. Korea, Kobayashi p. 266 pl. xiv fig. 27.

#### †CARPOIDEA

Carpoidea, Gill & Caster pp. 12-15, Regnéll (3) p. 775.

Superorder Astylophora nov. of subclass Homoiostelea, including order Soluta Jaekel, 1900, Gill & Caster p. 11.

*Heckericystis* gen. nov., family Dendrocystitidae for type *H. kuckersiana* (Hecker), 1940, Gill & Caster pp. 16-17 fig. 3.

Subclass Homoiostelea nov., Gill & Caster p. 11.

Subclass Homostelea nov., Gill & Caster p. 11.

Iowacystidae fam. nov. of order Soluta, for type genus *Iowacystis* Thomas and Ladd, 1926, Gill & Caster pp. 16, 20-22.

*Iowacystis sagittaria*, Gill & Caster fig. 5 p. 20.

Order Mitrata diagnosed, Gill & Caster p. 43.

*Mitrocystites mitra*, Regnéll (3) fig. 2 p. 775.

Suborder Placocystida diagnosed, Gill & Caster pp. 43-44.

*Placocystites forbesianus*, Gill & Caster text-fig. 10 p. 45.

Placocystitidae nom. nov. for Placocystidae Caster, 1952, Gill & Caster pp. 44-46.

Rutroclypeidae fam. nov. of order Soluta, for type genus *Rutroclypeus* Withers, 1933, Gill & Caster pp. 15, 22-30.

*Rutroclypeus* emended p. 30 with *R. victoriae* sp. nov. Devonian Australia pp. 34-40 text-fig. 8 pl. ii fig. 1 pl.iii figs. 1-3 pl. iv figs. 1-3 pl. v fig. 1 pl. vii, *R. (?) withersi* sp. nov. Devonian Australia pp. 40-42 pl. v figs. 2-4 pl. vi fig. 1, "*R. globulus*" pp. 42-43 text-fig. 9, *R. junori* pp. 30-34 pl. i figs. 1-3 pl. ii figs. 2, 3, Gill & Caster.

Superorder Stylophora nov. of subclass Homoistelea, including orders Cornuta Jaekel, 1900 and Mitrata Jaekel, 1921, Gill & Caster p. 11.

*Syringocrinus* with *S. paradoxicus*, Gill & Caster pp. 17-21 fig. 4.

*Victoriacystis* gen. nov. family Placocystitidae for type

*V. wilkinsi* sp. nov. Silurian Victoria, Australia pp. 46-52 text-fig. 11 pl. vii figs. 1, 2 pl. ix figs. 1, 2 pl. x fig. 2, *V. aff. wilkinsi* pp. 52-54 text-fig. 12A pl. ix fig. 3, another aff. *wilkinsi* pp. 54-55 text-fig. 12B pl. x figs. 1, 3, Gill & Caster.

#### †EDRIOASTEROIDEA

Edrioasteroids, Regnéll (1) pp. 77-78, (3) pp. 774-775.

*Carneyella pilea*, Kesling & Mintz pp. 327-336 figs. 3, 4 pls. v-ix (internal structures).

*Isorophus cincinnatiensis*, Kesling & Mintz pp. 320-327 figs. 1, 2, pls. i-iv (internal structures); *I. austini*, Regnéll (3) fig. 1 p. 774.

#### †BLASTOIDEA

Blastoids, Regnéll (1) pp. 73-76, (3) pp. 777-781.

*Pentremites gutschicki*, Regnéll (3) fig. 5 p. 779.

*Ptychoblastus* gen. nov., aff. *Cryptoblastus*, for type *P. pustulosus* sp. nov. Carboniferous Missouri, U.S., Fay pp. 1198-1201 fig. 1 A-F.

#### †OPHIOCYSTIOIDEA

Ophiocistoids, Regnéll (1) p. 78.



